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Docket No. F-8222

Ser. No. 10/825,744

REMARKS

Claims 1, 2, 4-12 and 14-22 are now pending in this application. Claims 1-13 are rejected. Claims 3 and 13 are cancelled herein. New claims 14-22 are added. Claims 1, and 6-12 are amended to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues since the claims are merely amended to place claims 3, 6, 11 and 12, indicated as containing allowable subject matter into proper form for allowance with claim 1 being amended to include the subject matter of claim 3, and claims 6, 11 and 12 being amended to stand in independent form. The amendments remove recitation of the words "steps" or "step" and thereby are broadening in the sense they avoid the possibility of invocation of §112, sixth paragraph, interpretations. For the convenience of the Examiner, APPENDIX I is provided herewith having a complete set of pending claims with all amendments effected therein.

INTERVIEW ACKNOWLEDGMENT

The applicant and applicant's attorney appreciate the Examiner's granting of the telephone interview conducted on August 7, 2006, and extend their thanks to the Examiner for her time and consideration. During the interview, the present amendments to the claims were discussed and it was agreed that the amendments would place the claims into condition for allowance. In particular, the ordering of

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the recitations of claim 1 was discussed and this is detailed further below with regard to the pertinent rejections.

CLAIM REJECTIONS UNDER 35 U.S.C. §101

Claims 1 through 13 are rejected under 35 U.S.C. §101 as allegedly being drawn to more than a single statutory class because the claim recites “both a process ... and a method of manufacture.” Applicant respectfully traverses this rejection.

The language of 35 U.S.C. §101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

This statutory language does not recognize different statutory classes for a process and a method of manufacture. Both of these fall under the statutory class of “process.” A method of manufacture is not included in the statutory class of a “manufacture.” Hence, it is respectfully submitted that claims 1 through 13 are not directed to more than one statutory class and withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 1-13 are rejected as indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject

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matter of the invention for allegedly presenting divergent scopes by referencing a "process of adjusting the temperature of a machining liquid" in the preamble and "steps drawn to the manufacture of a heat exchanger tube" in the body of the claim. Applicant respectfully traverses this rejection.

The Office Action suggests that the claims are indefinite because the metes and bounds are not clear due to the referencing of the above noted process and method in the claim "AND" for having limitations drawn to two statutory classes. With regard to the two alleged statutory classes, it is respectfully submitted that two classes are not presented for the reasons presented above with regard to the §101 rejections.

The allegation of the presentation of divergent scopes appear to be merely resulting from a manner of claim interpretation. The referencing of both a process of adjusting temperature and the method of manufacture, which is recited in the claims in a claim clause initiated with the recitation "constructing a ceramic heat exchange tube," does not present diverging scopes for the claims. Applicant respectfully submits that the acknowledgment in the Office Action that the process of adjusting temperature is recited in the preamble and the "method of manufacture" is recited in the body of the claim clearly delineates that the "constructing" clause of the claim, i.e., the "method of manufacture" is part of the overall "method of adjusting temperature" presented in the preamble. this is why the preamble concludes with the transition "comprising." Hence, the

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metes and bounds of the claim are specifically delineated as including the acts of constructing the ceramic heat exchanging tube, the feeding of the liquid to the ceramic heat exchanger and the adjusting of temperature using the liquid for adjusting temperature. Therefore, the scope of the method for adjusting temperature recited in the preamble includes the scope of the "constructing" clause and the scopes are therefore not divergent.

During the interview, the wording of claim 1 was discussed and it was agreed that the claim language would read more logically with the constructing clause presented at the beginning of the claim. It was noted by applicant's counsel that method claims are not required to be presented in step order and that the claims were understandable when read in light of the specification. However, in the interest of improving the perceived form of the claims, applicants have now amended the claims in accordance with the agreement reached during the aforesaid interview to place the "constructing" clause at the beginning of the body of the claims. Therefore, reconsideration of the rejection of claims 1-13 and their allowance are earnestly requested.

The Office Action states that claims 6, 11 and 12 contain allowable subject matter and would be allowed if amended to overcome their rejection under 35 U.S.C. §112, second paragraph, and stand in independent form. The claims are submitted as amended accordingly with the exception of the removal of the word "step" which is not considered to affect patentability. Accordingly,

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reconsideration of the rejection and allowance of the claims 6, 11 and 12 are further respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1, 2, 4, 5, 7-10 and 13 are rejected as obvious over The Aramaki reference in view of the Carbone of America Ind. Corp reference under 35 U.S.C. §103(a). The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

The Office Action indicates that the subject matters of claim 3, 6, 11 and 12 are allowable. Claim 1 is now amended to incorporate the subject matter of claim 3 and hence stands in place of claim. While claim 1 is amended to remove use of the word "step," it is respectfully submitted that the allowable subject matter of claim 3 is not altered in a manner which affects the indication of the Examiner. All remaining claims rejected as obvious depend from amended claim 1.

Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited references. Reconsideration of the rejections of the claims and their allowance are respectfully requested.

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CLAIM FEES

One further independent claim in excess of three is added. The fee of \$100.00 for the claims is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.

REQUEST FOR EXTENSION OF TIME

Applicant respectfully requests a two month extension of time for responding to the Office Action. The fee of \$225.00 for the extension is provided for in the charge authorization presented in the PTO Form 2038, Credit Card Payment form, provided herewith.

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

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In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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APPENDIX I

ALL PENDING CLAIMS WITH AMENDMENTS EFFECTED THEREIN

1. (Currently Amended) A method of adjusting temperature of a machining liquid after use in machining a workpiece, comprising:

constructing a ceramic heat exchanging tube such that metal ions do not solve out from the ceramic heat exchanging tube upon contact between the machining liquid and the ceramic heat exchanging tube, said constructing including baking a tube including silicon carbide (SiC) to form the ceramic heat exchanging tube, wherein the ceramic heat exchanging tube does not include boron;

feeding the machining liquid and a liquid for adjusting temperature of the machining liquid to the heat exchanger having the ceramic heat exchanging tube such that both the liquids are separated and the machining liquid contacts the ceramic heat exchanging tube; and

adjusting the temperature of the machining liquid to a prescribed temperature by means of supplying the liquid for adjusting temperature to a vicinity of the ceramic heat exchanging tube.

2. (Original) The method according to claim 1, wherein both liquids flow in the heat exchanger as countercurrents.

3. (Cancelled)

4. (Original) The method according to claim 1, wherein the machining liquid passes through the ceramic heat exchanging tube

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5. (Original) The method according to claim 1, wherein the heat exchanger further includes an outer tube covering the ceramic heat exchanging tube.

6. (Currently Amended) A method of adjusting temperature of a machining liquid after use in machining a workpiece, comprising:

constructing a ceramic heat exchanging tube such that metal ions do not solve out from the ceramic heat exchanging tube upon contact between the machining liquid and the ceramic heat exchanging tube, said constructing including baking a tube including silicon carbide (SiC) to form the ceramic heat exchanging tube, wherein the ceramic heat exchanging tube is made by baking silicon carbide (SiC) and resin only;

feeding the machining liquid and a liquid for adjusting temperature of the machining liquid to the heat exchanger having the ceramic heat exchanging tube such that both the liquids are separated and the machining liquid contacts the ceramic heat exchanging tube; and

adjusting the temperature of the machining liquid to a prescribed temperature by means of supplying the liquid for adjusting temperature to a vicinity of the ceramic heat exchanger tube.

7. (Currently Amended) The method according to claim 1, wherein the machining liquid is slurry for abrading or cutting the workpiece.

8. (Currently Amended) The method according to claim 1, wherein said feeding comprises directing the machining liquid in a first direction through the ceramic heat exchanging tube and directing the liquid for adjusting temperature

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in a second direction opposite to the first direction over the ceramic heat exchanging tube.

9. (Currently Amended) The method according to claim 1, wherein the heat exchanger further includes inlets and outlets for the machining liquid and the liquid for adjusting temperature, further comprising arranging the inlets and outlets such that the machining liquid and the liquid for adjusting temperature flow as countercurrents.

10. (Currently Amended) The method according to claim 1, wherein said feeding comprises directing the machining liquid into contact with an inner circumferential surface of the ceramic heat exchanging tube.

11. (Currently Amended) A method of adjusting temperature of a machining liquid after use in machining a workpiece, comprising:

constructing a ceramic heat exchanging tube such that metal ions do not solve out from the ceramic heat exchanging tube upon contact between the machining liquid and the ceramic heat exchanging tube, said constructing including forming a tube without boron and including silicon carbide (SiC) and baking the tube to form the ceramic heat exchanging tube;

feeding the machining liquid and a liquid for adjusting temperature of the machining liquid to the heat exchanger having the ceramic heat exchanging tube and in which both liquids are separated and the machining liquid contacts the ceramic heat exchanging tube; and

adjusting the temperature of the machining liquid to a prescribed temperature by means of supplying the liquid for adjusting temperature to a vicinity of the ceramic heat exchanger tube.

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12. (Currently Amended) A method of adjusting temperature of a machining liquid after use in machining a workpiece, comprising:

constructing a ceramic heat exchanging tube such that metal ions do not solve out from the ceramic heat exchanging tube upon contact between the machining liquid and the ceramic heat exchanging tube, said constructing including forming the ceramic heat exchanging tube from only silicon carbide and resin and baking the tube including the silicon carbide (SiC) to form the ceramic heat exchanging tube,

feeding the machining liquid and a liquid for adjusting temperature of the machining liquid to the heat exchanger having the ceramic heat exchanging tube and in which both liquids are separated and the machining liquid contacts the ceramic heat exchanging tube; and

adjusting the temperature of the machining liquid to a prescribed temperature by means of supplying the liquid for adjusting temperature to a vicinity of the ceramic heat exchanger tube.

13. (Cancelled)

14. (New) The method according to claim 6, wherein both liquids flow in the heat exchanger as countercurrents.

15. (New) The method according to claim 6, wherein the heat exchanger further includes an outer tube covering the ceramic heat exchanging tube.

16. (New) The method according to claim 6, wherein said feeding comprises directing the machining liquid in a first direction through the ceramic heat exchanging tube and directing the liquid for adjusting temperature in a

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second direction opposite to the first direction over the ceramic heat exchanging tube.

17. (New) The method according to claim 6, wherein the heat exchanger further includes inlets and outlets for the machining liquid and the liquid for adjusting temperature, further comprising arranging the inlets and outlets such that the machining liquid and the liquid for adjusting temperature flow as countercurrents.

18. (New) The method according to claim 6, wherein said feeding comprises directing the machining liquid into contact with an inner circumferential surface of the ceramic heat exchanging tube.

19. (New) The method according to claim 11, wherein the heat exchanger further includes an outer tube covering the ceramic heat exchanging tube.

20. (New) The method according to claim 11, wherein said feeding comprises directing the machining liquid in a first direction through the ceramic heat exchanging tube and directing the liquid for adjusting temperature in a second direction opposite to the first direction over the ceramic heat exchanging tube.

21. (New) The method according to claim 11, wherein the heat exchanger further includes inlets and outlets for the machining liquid and the liquid for adjusting temperature, further comprising arranging the inlets and

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outlets such that the machining liquid and the liquid for adjusting temperature flow as countercurrents.

22. (New) The method according to claim 11, wherein said feeding comprises directing the machining liquid into contact with an inner circumferential surface of the ceramic heat exchanging tube.

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